

WHAT IS CLAIMED IS:

- 1 1. Apparatus for security applications, the apparatus comprising:
2 an interface coupled to a storage network, the interface being adapted
3 to receive a frame from the storage network;
4 a classifier coupled to the interface, the classifier being adapted to
5 determine an information type associated with the frame, the type being an initiator, data, or
6 terminator, the classifier being adapted to determine header information associated with the
7 frame; and
8 a content addressable memory coupled to the classifier.
- 1 2. Apparatus of claim 1 wherein the content addressable memory
2 comprises a rule portion and a flow portion, the rule portion being adapted to determine
3 header information and command information from the initiator frame and the flow portion
4 being adapted to provide a flow based upon the header information.
- 1 3. Apparatus of claim 1 further comprising:
2 a central processing unit coupled to the classifier;
3 an action processor coupled to the central processing unit;
4 a security action processor SAP processor coupled to the central
5 processing unit, the SAP being adapted to process data block by block; and
6 an encryption/decryption processor coupled the security action
7 processor, the encryption/decryption processing being adapted to encrypt/decrypt the data
8 block by block.
- 1 4. Apparatus of claim 1 wherein the initiator determines a read or a write
2 process.
- 1 5. Apparatus of claim 1 wherein the content addressable memory
2 comprises at least two MBit.
- 1 6. Apparatus of claim 1 wherein the interface is adapted to receive the
2 frame through the fiber channel in a SCSI format.
- 1 7. Apparatus of claim 1 wherein the frame is associated with a SCSI
2 frame format.

- 1 8. Apparatus of claim 1 wherein the classifier is provided on an
2 integrated circuit chip.
- 1 9. Apparatus of claim 1 wherein the classifier is adapted to maintain wire
2 speed operation while determining the information type and header information associated
3 with the frame.
- 1 10. Apparatus of claim 1 further comprising a flow context random access
2 memory coupled to the classifier, the flow context random access memory being adapted to
3 store a policy based upon a flow, the flow being associated with the header information.
- 1 11. Apparatus of claim 1 wherein the classifier is used in determining
2 access controls to target volumes & partitions.
- 1 12. Apparatus of claim 1 wherein the classifier is used in allowing access
2 to specific targets only to authenticated hosts and, in some scenarios applications running on
3 the hosts.
- 1 13. Apparatus of claim 1 wherein the apparatus is operable in a NULL port
2 in a storage area network.
- 1 14. Apparatus for security applications of storage area networks, the
2 apparatus comprising:
3 an interface coupled to a storage network, the interface being adapted
4 to receive a frame from the storage network;
5 a classifier coupled to the interface, the classifier being adapted to
6 determine an information type associated with the frame, the type being an initiator, data, or
7 terminator, the classifier being adapted to determine header information associated with the
8 frame; and
9 a content addressable memory coupled to the classifier, the content
10 addressable memory comprises a rule portion and a flow portion, the rule portion being
11 adapted to determine header information and command information from the initiator frame
12 and the flow portion being adapted to provide a flow based upon the header information;
13 a central processing unit coupled to the classifier;
14 an action processor coupled to the central processing unit;

15 a security action processor SAP processor coupled to the central
16 processing unit, the SAP being adapted to process data block by block; and
17 an encryption/decryption processor coupled the security action
18 processor, the encryption/decryption processor being adapted to encrypt/decrypt the data
19 block by block.

1 15. Apparatus of claim 14 wherein the initiator determines a read or a
2 write process.

1 16. Apparatus of claim 14 wherein the content addressable memory
2 comprises at least two MBit.

1 17. Apparatus of claim 14 wherein the interface is adapted to receive the
2 frame through the fiber channel in a SCSI format.

1 18. Apparatus of claim 14 wherein the frame is associated with a SCSI
2 frame format.

1 19. Apparatus of claim 14 wherein the classifier is provided on an
2 integrated circuit chip.

1 20. Apparatus of claim 14 wherein the classifier is adapted to maintain
2 wire speed operation while determining the information type and header information
3 associated with the frame.

1 21. Apparatus of claim 14 further comprising a flow context random
2 access memory coupled to the classifier, the flow context random access memory being
3 adapted to store a policy based upon a flow, the flow being associated with the header
4 information.

1 22. Apparatus of claim 14 wherein the apparatus is not a switch or a router
2 or a virtualization device.

1 23. Apparatus of claim 22 wherein the apparatus further comprises a
2 switch or a router or a virtualization device.

1 24. A method for security applications for storage area networks, the
2 method comprising:

3 receiving one or more frames at a security apparatus from a storage area
4 network device through a fibre channel, the storage area network device being operated by
5 client device, the client device being coupled to the storage area network device;
6 determining a frame type of the one or more frames at the security apparatus;
7 creating a flow process through one or more processors if the frame type of an
8 initiator frame;
9 processing one or more subsequent frames associated with the flow process
10 through the one or more processors at wire speed;
11 whereupon the processing is substantially transparent to a user of the client
12 device.